UNITED STATES PATENT OFFICE.

ALFRED W. SPERRY, OF HARTFORD, CONNECTICUT, ASSIGNOR TO HIMSELF AND THOMAS J. MONTGOMERY, OF BOSTON, MASSACHUSETTS.

COMPOSITION FOR SHARPENING AND GRINDING METALS.

SPECIFICATION forming part of Letters Patent No. 290,368, dated December 18, 1883.

Application filed July 20, 1883. (No specimens.)

To all whom it may concern:

Be it known that I, ALFRED W. SPERRY, of Hartford, in the State of Connecticut, have invented a new and Improved Composition for Sharpening and Grinding Metal Wares, of which the following is a specification.

It is common to employ sticks surfaced with emery for sharpening knives, scythes, and other cutting implements, and emery wheels to grind, polish, and sharpen metal goods generally. I employ emery with oxide of iron in a finely-pulverized condition, with adhesive material—such as glue—to form a grinding and polishing substance. These materials have been used separately; but I find that the oxide of iron modifies the action of the emery by lessening the scratching of the material that is being ground and polished. I add linseed-oil to the composition to prevent the adhesion of the particles of metal that are ground off, and also use milk, which aids in preventing injury to the grinder by the action of water.

In my improved composition I make use of the following ingredients: glue, boiled linseed-oil, milk, oxide of iron, and emery. The quantities of these several ingredients and their manipulation are as follows: I take, say, one and three-fourths pound of fine glue, and twelve ounces of boiled linseed-oil, and add to them two quarts of milk. This mixture is cooked at as even a temperature as possible for eighteen hours in a water bath, and at the end of this time I add ten ounces of oxide of iron, and mix and thoroughly stir the mass while hot. To this aforesaid hot mass I add about seven pounds of emery, or in that proportion. Care is to be taken not to mix together too much of the materials at one time, because the mass is liable to harden rapidly after the emery is added. It is preferable to mix together from time to time the hot semi-liquid material with the emery in the proportion of one pound of emery to one-seventh of such hot semi-liquid material and to place it in the mold or molds to set and harden. After the composition has been placed in the molds, said molds should be placed in cold water for the composition to set and harden sufficiently to allow the molds to be removed and the composition, in its desired form, to be set aside for a few days to season before being used. This composition is exceedingly hard and tenacious. It is to be understood that the amount of material mixed at once will vary according to the size of the grinder that is to be molded.

I may find it advantageous to increase or diminish some or all of the proportions of these ingredients, and I hereby reserve the right to so do without altering my said invention. The material spoken of as "oxide of iron" is an iron ore treated by heat the same as in the manufacture of rouge and crocus, but subjected to a higher temperature, so as to make it of a darker color, and the same is pulverized to a fine powder.

The oil in the aforesaid composition appears to prevent the surface glazing by the adhesion of particles of the substances acted upon, and the milk and oil prevent injury to the grinder by water. By increasing the proportion of pulverized oxide of iron, the grinding qualities of the material will be lessened and the polishing qualities increased.

I claim as my invention—

The grinding or polishing wheel or surface, formed of emery, oxide of iron, glue, linseed-oil, and milk, mixed together substantially as set forth.

ALFRED W. SPERRY.

Witnesses:
DAVID L. ABERDEIN,
HUGH O'FLAHERTY.